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(54) Title: AUTOMATED CENTERLINE DETECTION ALGORITHM FOR COLON-LIKE 3D SURFACES

(57) Abstract: A three dimensional image of the colon like surface is processed to determine at least its ring structure. The image is composed of vertex points, each vertex point having a discrete point identifier and three dimensional position information. The three dimensional position information is averaged in a shrinking procedure to contract the three dimensional image proximate to a major axis of the colon-like surface. Evenly spaced points are taken through the shrunken colon like surface and connected to form a curve. Planes are generated at intervals normal to the curve to split the shrunken colon like surface into image segments. By mapping these image segments back to the original image through their discrete point identifiers, an accurate ring profile of the colon like surface can be generated.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/40641

A. CLASSIFICATION OF SUBJECT MATTER												
IPC(7) : G06K 9/00, 9/36; H05G 1/60; G09B 19/00; G06T 15/00, 17/00; G09G 5/00; G06F 19/00 US CL : 382/128, 131, 276, 285, 291; 378/4, 21, 22; 600/425; 434/272, 257; 345/419, 420, 621, 622; 700/98 According to International Patent Classification (IPC) or to both national classification and IPC												
B. FIELDS SEARCHED												
Minimum documentation searched (classification system followed by classification symbols) U.S. : 382/128, 131, 276, 285, 291; 378/4, 21, 22; 600/425; 434/272, 257; 345/419, 420, 621, 622; 700/98												
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched												
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)												
C. DOCUMENTS CONSIDERED TO BE RELEVANT												
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
X	US 5,920,319 A (VINING ET AL.) 06 July 1999 (06.07.1999), the whole document.	1-12										
X	US 5,782,762 A (VINING) 21 July 1998 (21.07.1998), the whole document.	1-12										
X	WO 9832371 A1 (JOHNSON ET AL.) 30 July 1998 (30.07.1998), the whole document.	1-12										
X	US 5,971,767 A (KAUFMAN ET AL.) 26 October 1999 (26.10.1999), the whole document.	1-12										
A	US 5,728,044 A (SHAN) 17 March 1998 (17.03.1998), the whole document.	1-12										
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